

**METHOD AND APPARATUS FOR OPTICAL DETECTION OF MIXED  
VENOUS AND ARTERIAL BLOOD PULSATION IN TISSUE**

**ABSTRACT OF THE DISCLOSURE**

A method and device for detecting the presence of mixed venous and arterial blood pulsation in tissue, including receiving first and second electromagnetic radiation signals from a blood perfused tissue portion corresponding to infrared and red wavelengths of light, obtaining a measure of a phase difference between the first and second electromagnetic radiation signals, comparing the measure with a threshold value to form a comparison, and detecting the presence or absence of venous pulsation using the comparison.

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